Trunk Mount Amplifier
(120-1971B) Features Faxback Doc. # 18178

Your Optimus 2 x 50-Watt Trunk Mount Amplifier is designed to give added punch and power to your automobile's existing autosound system. The amplifier produces up to 50 watts per channel of clean, powerful sound at all audio frequencies with minimum distortion.

The amplifier's features include:

Full MOSFET Power Supply - produces enough power to supply the main amplifier and has a considerable amount of reserve power for peak "high demand" situations.

High or Low-Level Input Signal Compatible - accepts either high-level (speaker) or low-level (pre-amplifier) input signals to match your autosound system's output for the best performance.

Input Level Control - lets you adjust the level (high or low) of audio signals that enter the amplifier.

Thermal Overload Protection - automatically shuts down the amplifier when it overheats or when its load or DC power output is shorted.

14k Gold-Plated Speaker Terminals - have high conductivity and minimum impedance.

WARNING: If you live in a high temperature area, we recommend you install cooling fans on the amplifier to provide a better operating temperature environment. Contact your local Radio Shack store for a suitable cooling fan.

If the connectors on your vehicle or automobile's autosound system are not compatible with the amplifier's connectors, contact your local Radio Shack store. Radio Shack stores sell adapter harnesses for many vehicles.

Before you install the amplifier, carefully read all instructions.

Please note the following before you begin installing the amplifier:

For added safety and to protect your autosound system and amplifier, disconnect your vehicle battery's negative (-) cable before you begin making the connections.

Do not mount the amplifier until you are sure the connections are correct. To help you determine this, temporarily connect the amplifier and test it to be sure it works before you permanently mount the amplifier.

CHOOSING A MOUNTING LOCATION

Choose a mounting location that meets the following requirements:

Does not interfere with the vehicle's operation.

Lets you drill mounting holes without damaging other vehicle components.

Allows enough space around the cooling fins to permit reasonable airflow and cooling.

WARNING: Do not touch the amplifier when it is on. The amplifier gets very hot while in use.

INCLUDED WITH THE AMPLIFIER

Your amplifier comes with the following items that are necessary for mounting. (See "Mounting the Amplifier," Faxback Doc. #). Be sure to unpack these items before you dispose of the packing materials.

4 Sheet-Metal Screws

4 Spring Washers

4 Flat Washers

CONNECTING POWER

Place the amplifier on the desired mounting location, then follow these steps to connect power to the amplifier, see illustration in Faxback Doc #18004.

1. Connect one end of the supplied black (ground) wire to a nearby part of the vehicle's metal frame (chassis ground).

   NOTE: Many modern vehicle parts are made of plastic or other materials that do not conduct electricity. You must connect the black (ground) wire to a metal part that is not insulated from the vehicle's frame by one of these non-conducting parts.

2. Connect the other end of the wire to the amplifier's GND terminal.

3. Connect one end of the supplied red (power) wire directly to your vehicle's +12 volt battery power source.

4. Connect the other end of the wire to the amplifier's +12V terminal.

5. Connect one end of the supplied blue with white stripe (remote) wire's male quick disconnect plug to your autosound system's switched power output lead.

6. Connect the other end of the wire to the amplifier's REM terminal. This connection turns the amplifier on/off when you turn your autosound system on/off.

CONNECTING THE AMPLIFIER

You can connect your autosound system to the amplifier's low- or high-level input terminals.

If your autosound system has phono-type outputs, connect them to the amplifier's low level input terminals for a cleaner, less noisy signal. If your autosound system has only speaker outputs, connect them to the amplifier's high-level input terminals.

Low-Level Inputs

Your amplifier has gold-plated low-level input terminals to match radios and equalizers with phono-type line-level outputs.

Using plug-to-plug phono cables (such as Radio Shack cat. No. 42-2356, not supplied), connect the autosound system's left and right, low-level output phono jacks to the amplifier's corresponding left and right LOW INPUT phono terminals, see illustration in Faxback Doc. #18004.

High-Level Inputs

If your vehicle's autosound system does not have phono-type output jacks, connect its left and right speaker output wires to the amplifier's HIGH INPUT corresponding L and R terminals, see illustration in Faxback Doc. #18004.

NOTES: Be sure to connect the terminals +to+ and -to-.

If the autosound system has only three wires, connect the common speaker wire to both of the amplifier's L and R negative (-) terminals, see illustration in Faxback Doc #18004.

CONNECTING THE OUTPUTS

Using 18-gauge stranded speaker wire (such as Radio Shack Cat. No. 278-1217, not supplied), connect the autosound system's left and right speakers to the amplifier's corresponding left and right SPEAKER terminals, see illustration in Faxback Doc. #18004.

1. Disconnect the left speaker's positive (+) wire from your autosound system and reconnect it to the amplifier's left positive (+) SPEAKER terminal.

   Note: The positive wire's insulator might be marked with a positive (+) symbol, a ridge, or a white stripe, or the conductor wire strands might be gold colored.

2. Disconnect the left speaker's negative (-) wire from your autosound system and reconnect it to the amplifier's left negative (-) SPEAKER terminal.

   Note: The negative wire's insulator might be marked with a negative symbol (-) or the conductor wire strands might be silver colored.

3. Repeat Steps 1 and 2 to connect the right speaker to the amplifier's right SPEAKER terminals.

TESTING THE AMPLIFIER

1. Temporarily reconnect your vehicle battery's negative (-) cable.

2. Turn on your vehicle's ignition and verify that both the amplifier and your autosound system work properly.

3. If both the amplifier and your autosound system work properly, proceed to "Mounting the Amplifier," Faxback Doc. # .

   If either the amplifier or your autosound system does not work properly, immediately disconnect your vehicle battery's negative (-) cable and carefully recheck your connections.

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Follow these steps to mount the amplifier in the location you chose earlier.

1. Disconnect your vehicle battery's negative (-) cable.

2. Label and Disconnect the amplifier's input and output wires to make mounting more convenient.

3. Using the mounting holes on the amplifier as a guide, mark the locations for the mounting holes.

4. Drill 9/64-inch holes in the marked locations, taking care not to damage anything behind the mounting surface.

5. Attach the amplifier to the mounting surface using the supplied sheet-metal screws and washers.

6. Reconnect the amplifier's wires.

7. Reconnect your vehicle battery's negative (-) cable.

TURNING ON THE AMPLIFIER

The amplifier automatically turns on whenever you turn on your autosound system. The POWER indicator lights when the amplifier is on.

Thermal Overload Protection

The amplifier's overload protection circuit automatically shuts down the amplifier and the red overload PROTECTION indicator lights under the following conditions:

- The amplifier is overheated.
- The speaker wires are shorted.
- The DC power output is shorted.
- The ground wire is open.
- The speakers' impedance is above or below the rated output impedance.

If this happens, turn off your autosound system, let the amplifier cool down. Then before you restart, check to make sure the speaker wires are not touching, the ground wire is properly connected to your vehicle's chassis, and the speakers' impedance is 8 Ohms.

SETTING THE INPUT LEVEL CONTROL

LEVEL lets you adjust the level of audio signals that enter the amplifier. For the best performance, follow these steps to adjust the input level.

1. Turn LEVEL fully clockwise to MAX.
2. Turn on your vehicle's ignition (if necessary), then turn on your autosound system. The amplifier turns on.
3. Adjust the autosound system's volume control to a comfortable listening level.

LISTENING SAFELY

To protect your hearing, follow these guidelines:

Do not listen at extremely high volume levels. Extended, high-volume listening can lead to permanent hearing loss.

Always start by setting the volume to the lowest level possible before you begin listening, then gradually increase the volume as necessary.

Once you set the volume, do not increase it. Over a period of time, your ears adapt to the volume level, so a volume level that does not cause discomfort might still damage your hearing.

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(120-1971B) Care And Maintenance Faxback Doc. # 18177

REPLACING A FUSE

If the amplifier shuts down but the red PROTECTION indicator does not light, you might need to replace the power wire's 15-amp tube-type fuse (Cat. No. 270-1073), the blade-type fuse (Cat. No. 270-1082), or both fuses.

Follow these steps to check a fuse and replace it, if necessary.

1. Turn off your sound system.

2. Disconnect your vehicle battery's negative (-) terminal

3. To remove the red power wire's fuse, grasp the two ends of the fuse holder and twist them counterclockwise, then pull the ends apart.

   To remove the front panel's automotive fuse, grasp the fuse's plastic end and pull it out.

4. Remove and replace the fuse.

   Caution: Do not use a fuse other than the specified fuse. Doing so might damage your amplifier.

5. Grasp the two fuse-holder's ends, push them in and twist them clockwise.

6. Let the amplifier cool down before you restart it.

Trunk Mount Amplifier
(120-1971B) Specifications Faxback Doc. # 18182

10% THD Output Power @ 14.4 VDC 1 kHz:.....50W x 2
Frequency Response:.....20-20,000 Hz (plus/minus 3dB)
Input Impedance:.....10k Ohms
Input Sensitivity (for 10% T.H.D. Output Power):
Low Input:.....250 mV
High Input:.....2.5 V
Power Supply Voltage:.....DC 14.4 V Negative Ground
Matching Speaker Impedance:.....4-8 Ohms
Maximum Current Draw:.....15A
Dimensions:.....2 1/16 x 7 7/8 x 7 7/8 inch
(52 x 200 x 200 mm) HWD
Net Weight:.....3.9 lbs (1.77 Kg)

Audio Connection Information
(120-Series) Plug/Male 2 Ch. System Faxback Doc.# 19994

Pin No.	WIRE COLOR	WIRE SPECS.	LABEL	REMARK
1	WHT/BLK	AWG #20 2P CORD	FRONT L-	STRIP SOLDER
2	GRY/BLK	"	FRONT R-	"
3				
4				
5	BLACK	AWG 206	GROUND	6.3mm r FORK TERMINAL
6	ORG/WHT *	"	DIMMER	STRIP SOLDER
7	PINK/WHT *	"	PHONE MUTE	"
8	WHITE	AWG #20 2p CORD	FRONT L+	"
9	GRAY	"	FRONT R+	"
10				

11				
12	RED	AWG #20	+12 V TO IGNITION	250/ 1A FUSE & 24M/M TRANS STRIP SOLDER
13	YELLOW	"	+12 V TO BATTERY	250/ 1A FUSE STRIP SOLDER
14	DARK BLUE/ WHITE	"	AMP REMOTE TURN ON 500mA MAX +12 V OUTPUT	WIRE BANDING & TUBE HEATING

* May or may not be present depending on features of individual radios.

(2CH/4CH SWITCHABLE UNIT)

Pin No.	WIRE COLOR	WIRE SPECS.	LABEL	REMARK
1	WHT/BLK	AWG #20 2P CORD	FRONT L-	STRIP SOLDER
2	GRY/BLK	"	FRONT R-	"
3	GRN/BLK	"	REAR L-	"
4	VIO/BLK	"	REAR R-	"
5	BLACK	AWG 206	GROUND	6.3mm r FORK TERMINAL
6	ORG/WHT *	"	DIMMER	STRIP SOLDER
7	PINK/WHT *	"	PHONE MUTE	"
8	WHITE	AWG #20 2p CORD	FRONT L+	"
9	GRAY	"	FRONT R+	"
10	GREEN	"	REAR L+	
11	VIOLET	"	REAR R+	"

12	RED	AWG #20	+12 V TO IGNITION	250/ 1A FUSE & 24M/M TRANS STRIP SOLDER
13	YELLOW	"	+12 V TO BATTERY	250/ 1A FUSE STRIP SOLDER
14	DARK BLUE/ WHITE	"	AMP REMOTE TURN ON 500mA MAX +12 V OUTPUT	WIRE BANDING & TUBE HEATING

* May or may not be present depending on features of individual radios.

4 Chnl Unit

Pin No.	WIRE COLOR	WIRE SPECS.	LABEL	REMARK
1	WHT/BLK	AWG #20 2P CORD	FRONT L-	STRIP SOLDER
2	GRY/BLK	"	FRONT R-	"
3	GRN/BLK	"	REAR L-	"
4	VIO/BLK	"	REAR R-	"
5	BLACK	AWG 206	GROUND	6.3mm r FORK TERMINAL
6	ORG/WHT *	"	DIMMER	STRIP SOLDER
7	PINK/WHT *	"	PHONE MUTE	"
8	WHITE	AWG #20 2p CORD	FRONT L+	"
9	GRAY	"	FRONT R+	"
10	GREEN	"	REAR L+	
11	VIOLET	"	REAR R+	"
12	RED	AWG #20	+12 V TO IGNITION	250/ 1A FUSE & 24M/M TRANS STRIP SOLDER

13	YELLOW	"	+12 V TO BATTERY	250/ 1A FUSE STRIP SOLDER
14	DARK BLUE/ WHITE	"	AMP REMOTE TURN ON 500mA MAX +12 V OUTPUT	WIRE BANDING & TUBE HEATING

* May or may not be present depending on features of individual radios.

5-Pin DIN

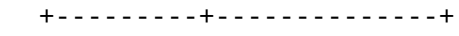
FRONT

Green	Right (+)
White	Right (-)
Brown	Left (+)
Gray	Left (-)
Red	+12 V Power

REAR

GRN/BLK	Right (+)
WH/BLK	Right (-)
BR/BLK	Left (+)
GRAY/BLK	Left (-)

Orange	S.P.L.
Black	Ground
Red w/ White	Memory Backup



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